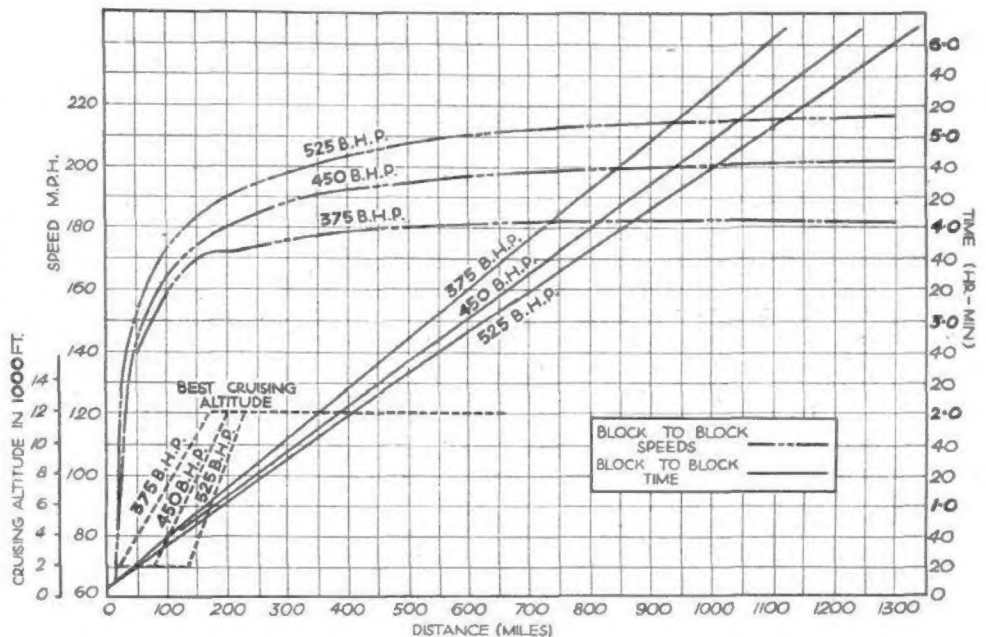


LOCKHEED FOURTEENS

Details of the Radio Equipment : Remarkable Long-range Performance

Some idea of the methods employed in organising for maximum economy and efficiency with modern types of transport machines may be gathered from this graph giving block-to-block speeds and times for different trip lengths with the Lockheed Fourteen. In its application the assumptions made are that five minutes will be spent in manoeuvring below 500ft. at each end of the journey; that the climb is started at 500ft. (using an average power of 575 h.p. up to 12,000ft. at a true air-speed of 135 m.p.h.); and that the power descent is made at the rate of 300ft./min. The speeds given, of course, take no account of wind, the effects of which must be read off from another graph. In dotted lines on the left are the "best altitude" curves which are read off against the outer figures; for any distance greater than 225 miles it is preferable to climb to the optimum height.



side of the compartment, while the operator has a seat arranged athwartship. Beside and behind him is a case used for the carriage of those radio spares and similar items which may be needed. Proper electric lighting arrangements are made for the operator when he is working during the hours of darkness, and the neatly installed equipment carries a built-in table on which the log may be kept and any incidental navigation work carried out.

Performance Variations

Although the basic figures are given separately in the table to be found below, the varied performances which are available with the standard Fourteen are interesting enough to merit special attention. These different figures depend on the power which is being taken from the two Wright Cyclone F.62 engines, which are blown and geared to a ratio of 16:11. On the power output, of course, depends the consumption, and this output must be varied according to the weather conditions and the range attempted with different loads. Recently, it will be

speed at the same power, but at 7,000 feet, is 245 m.p.h., which may be considered as the machine's maximum in normal operation, though another 140 h.p. is still available for take-offs and emergency use. The best speed figure when using 550 h.p. is that of 228 m.p.h. at 13,000 feet, while the best at 450 h.p. is 214 m.p.h. at 15,000 feet. The take-off rating of 900 h.p. is obtained at an engine speed of 2,350 r.p.m., while the normal rating at the same engine speed up to 6,600 feet is 810 h.p.—a power which may be used for emergency climb or other purpose during reasonably short periods of time.

A maximum fuel capacity of 644 American gallons (536 English gallons) is carried, and with this fuel load the machine has a range of 2,080 miles at a still air cruising speed of 184 m.p.h. In this case only 375 h.p. is being

LOCKHEED FOURTEEN Two Wright Cyclone F.62 Engines

Span	65ft. 6in.
Length	44ft. 4in.
Weight empty	10,750 lb.
Provisional all-up weight	17,500 lb.

At 15,500 lb. all-up weight:—

Still air take-off run with flaps (900 h.p./eng.)	670ft.
Still air take-off without flaps (900 h.p./eng.)	830ft.
Landing speed in still air with flaps	65 m.p.h.
Distance to clear 50ft. obstacle from standing start	1,925ft.
Distance to stop after clearing 50ft. obstacle	1,375ft.
Maximum rate of climb (760 h.p./eng.)	1,520ft./min.
Ceiling with one engine in full load	11,500ft.
Maximum speed at 7,000ft. (760 h.p./eng.)	245 m.p.h.
Cruising speed at 13,000ft. (550 h.p./eng.)	228 m.p.h.



British Airways Fourteens are the first British machines to be fitted with the new Marconi streamlined D/F aerial, the casing of which will be seen just aft of the fixed aerial support. The "rails," which may just be discerned under the fuselage between the undercarriage legs, are part of the blind-approach aerial system.

remembered, one of these machines was flown non-stop to and from Stockholm at an average over-all speed of 179 m.p.h.

The optimum cruising altitude with F.62 engines is 13,000 feet, but the best speed varies for different heights according to the amount of power which is being taken out of the engines. At sea level, for instance, the maximum speed (at a gross weight of 15,500 lb.) is 227 m.p.h., when 760 h.p. is being taken from each engine. The